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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,054	03/31/2004	Che-Hsiung Hsu	UC0419USNA	7931

23906 7590 11/29/2007

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WILMINGTON, DE 19805

EXAMINER	
WEBB, GREGORY E	
ART UNIT	**PAPER NUMBER**
1796	

NOTIFICATION DATE	DELIVERY MODE
11/29/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-Legal.PRC@usa.dupont.com

Office Action Summary	Application No.	Applicant(s)	
	10/815,054	HSU ET AL.	
	Examiner	Art Unit	
	Gregory E. Webb	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 August 2007*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

11/25/07

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 8/16/07 have been fully considered but they are not fully persuasive.

2. Previous ODP rejections are withdrawn based on the applicant's arguments, amendments and timely filing of the terminal disclaimer.

3. The applicant argue the prior art fails to teach the conductive polymer doped with the anion.

4. Concerning the Schwark '106 reference, Schwark teaches adding to the electrically conductive polymer a polyanion compound to act as a binder (see par 44). Such polyanions would qualify as the applicant's claimed organic anion.

5. Concerning the Cao '999 reference, Cao the examiner agrees this reference fails to teach the doping with the anion.

6. Concerning the Parker '291 reference, Parker teaches materials which can be added to the polyaniline including protonic acids which complex with the aniline.

7. Parker further teaches suitable protonic acids including those of formula VII.

8. Parker teaches the anion of this compound to be various anionic groups (see parargraph 106).

9. Concerning the Zhang reference, Zhang teaches in paragraph 97 similar protonic acids having anions.

10. Concerning the Hsu reference, Hsu teaches adding various compounds to the polymer dispersion including oxidizing agents having anions such as ammonium persulfate and sodium persulfate (see col. 9, lines 5-20).

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Parker, Ian D. (US20020036291).

Concerning the non-aqueous, Parker, Ian D. teaches the following:

> [0130] In the case where it is desired to cast the layer from a **non-aqueous solution or dispersion** the bulk polymer may be selected from, for example liquefiable polyethylenes, isotactic polypropylene, polystyrene, poly(vinylalcohol), poly(ethylvinylacetate), polybutadienes, polyisoprenes, ethylenevinylene-copolymers, thylene-propylene copo 1 ymers, poly(ethyleneterephthalate), poly(butyleneterephthalate) and nylons such as nylon 12, nylon 8, nylon 6, nylon 6.6 and the like, polyester materials, polyamides such as polyacrylamides and the like. (*emphasis added*)

Concerning the conductive polymer, conductive, preferred conductive polymer, most preferred conductive polymer and the thiophene, Parker, Ian D. teaches the following:

> [0078] When the terms "**polyaniline**" or PANI are used herein, they are used generically to include substituted and unsubstituted materials, as well as other equivalent conjugated **conductive polymer**s such as the **polypyrrole**s, or the **polythiophene**s, for example poly(ethylenedioxythioph- ene) ("PEDT") unless the context is clear that only the specific nonsubstituted form is intended. It is also used in a manner to include any accompanying dopants, particularly acidic materials used to render the **polyaniline conductive**. (*emphasis added*)

3. Claims 1-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhang, Chi (US20020031602).

Concerning the non-aqueous and the dispersion, Zhang, Chi teaches the following:

> [0121] In the case where it is desired to cast the layer from a **non-aqueous solution or dispersion** the bulk polymer may be selected from, for example liquefiable polyethylenes, isotactic polypropylene, polystyrene, poly(vinylalcohol), poly(ethylvinylacetate), polybutadienes, polyisoprenes, ethylenevinylene copolymers, ethylene-propylene copolymers, poly(ethyleneterephthalate), poly(butyleneterephthalate) and nylons such as nylon 12, nylon 8, nylon 6, nylon 6.6 and the like, polyester materials, polyamides such as polyacrylamides and the like. (*emphasis added*)

Concerning the conductive polymer, conductive, preferred conductive polymer, most preferred conductive polymer, thiophene, polymers and the product by process claims, Zhang, Chi teaches the following:

> [0068] The **buffer layer** 112 facilitates hole injection/transport. The **buffer layer** 112 may include **polyaniline** (PANI) or an equivalent conjugated **conductive polymer** such as polypyrole or **polythiophene**, most commonly in a blend with one or more non**conductive polymer**s. Polyaniline is particularly useful. Most commonly it is in the emeraldine salt (ES) form. Useful **conductive polyanilines** include the homopolymer and derivatives usually as blends with bulk **polymers** (also known as host **polymers**). Examples of PANI are those disclosed in U.S. Pat. No. 5,232,631. The preferred PANI blend materials for this layer have a bulk conductivity of from about 10.sup.-4 S/cm to 10.sup.-11 S/cm. More preferred PANI blends have a bulk conductivity of from 10.sup.-5 S/cm to 10.sup.-8 S/cm. (*emphasis added*)

4. Claims 1-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Schwark, Dwight W. (US20030025106).

Concerning the non-aqueous and the product by process claims, Schwark, Dwight W. teaches the following:

> [0021] The present invention improves the manufacturability of imaging elements containing antistatic layers by employing novel coating compositions. For example, in certain manufacturing environments, drying capacities are limited, and the use of more volatile organic solvent rich coating formulations is required. Thus, to accommodate such manufacturing environments coating compositions employing **low water contents** are preferred. In addition, organic solvent rich coating compositions can eliminate the requirement of additional subbing layers on imaging supports and thereby lead to a simplification of the manufacturing process for the imaging element. Therefore, an aim of the present invention is to formulate coating compositions employing **organic solvents in combination with a minimal amount of water** that can provide electrically-**conductive layer**s without significant coloration. (*emphasis added*)

Concerning the conductive polymer, conductive, preferred conductive polymer, most preferred conductive polymer, thiophene and the sulfonic acid, Schwark, Dwight W. teaches the following:

> [0052] The electrically-**conductive polymer** in the following examples is a **polythiophene** derivative. It is a commercially available 1.22 wt % aqueous solution of a substituted **thiophene**-containing polymer supplied by Bayer Corporation as Baytron.TM. P. This electrically-**conductive polymer** is based on an ethylene dioxy**thiophene** in the presence of styrene **sulfonic acid**, henceforth referred to as EDOT. (*emphasis added*)

Concerning the ethers, Schwark, Dwight W. teaches the following:

> [0044] In the present invention, the substituted or unsubstituted thiophene-containing electrically-conductive polymer, polyanion compound and other components further comprising the coating composition, such as the film-forming binder, may be soluble or dispersible in the organic solvents and mixtures with minimal amounts of water. Examples of film-forming binders suitable for the present invention include, but are not limited to the following or mixtures of the following: cellulosic materials, such as cellulose esters and cellulose **ethers**; homopolymers or copolymers from styrene, vinylidene chloride, vinyl chloride, alkyl acrylate, alkyl methacrylate, acrylamide, methacrylamide, acrylonitrile, methacrylonitrile, vinyl ether, and vinyl acetate monomers; polyesters or copolyesters; polyurethanes or polyurethane acrylates; and polyvinylpyrrolidone. The

> preferred film-forming binder for the present invention is a cellulose ester and most preferred is cellulose diacetate. (*emphasis added*)

Concerning the method of making the dispersion, Schwark, Dwight W. teaches the following:

> 10. The coating composition of claim 1 further comprising addenda selected from the group consisting of surfactants, coating aids, **dispersing** aids, thickeners, coalescing aids, crosslinking agents or hardeners, soluble particle dyes, solid particle dyes, antifoggants, biocides, matte particles, lubricants, pigments and magnetic particles. (*emphasis added*)

5. Claims 1-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Tahon (US7108805).

Concerning the non-aqueous, Tahon teaches the following:

> According to a thirtieth embodiment of the method, according to the present invention, wherein **non-aqueous** solvent is added in a further process step and said further added **non-aqueous** solvent is a di- or polyhydroxy- and/or carboxy groups or amide or lactam group containing organic compound for example sugar alcohols, such as sorbitol, mannitol, saccharose and fructose, diethylene glycol, 1,2-propandiol and propylene glycol. (*emphasis added*)

Concerning the dispersion, Tahon teaches the following:

> In general the degree to which water can be removed in the process, according to the present invention, will depend upon the ability of the water to diffuse through the **dispersion** to the surface, which is dependent upon the viscosity of the PEDOT/PSS-**dispersion** under the evaporation conditions. However, the viscosity of PEDOT/PSS-**dispersion**s is strongly dependent upon the PEDOT/PSS-content in the final **dispersion**. Water-contents of 1 to 5% by weight can be easily realized with **dispersion**s of 0.8% by weight PEDOT/PSS with a weight ratio of PEDOT to PSS of 1:2.4, but just increasing the content of PEDOT/PSS, with a weight ratio of PEDOT to PSS of 1:2.4, to 1.0% by weight has such a strong influence on the viscosity of the **dispersion** that the easily realizable water-content increases to 10 to 15% by weight. (*emphasis added*)

Concerning the conductive polymer and the conductive, Tahon teaches the following:

> For many applications it is desirable that the coating medium of the **conductive polymer** dispersion be largely non-aqueous to aid surface wettability and reduce the energy requirements for drying. However, to avoid excessive dilution of the **conductive polymer**, large coating thicknesses and excessive use of solvent, the concentration of **conductive polymer** should be as high as possible. This can be realized by diluting aqueous dispersions with organic solvents, but this results in extreme dilution of the **conductive polymer** to 0.00588 to 0.0294% by weight, as disclosed in EP-A 1 081 546, EP-A 1 081 548 and EP-A 1 081 549. (*emphasis added*)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory E. Webb whose telephone number is 571-272-1325. The examiner can normally be reached on 9:00-17:30 (m-f).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

11/25/07

Gregory E. Webb
Primary Examiner
Art Unit 1796

gew